Appl. No.: 09/522,108
Amdt. Dated June 18, 2004
Reply to Office Action of February 2, 2004

Amendments to the Claims:

This listing of claims will replace all prior versions, and listings, of claims in the application:

Listing of Claims:

1. (currently amended) A method for encoding control data in a video data file stream, the video data file comprising at least one video frame, said method comprising the steps of:

(a) generating an image data file comprising a video frame including a pixel representation representations of desired control data in at least one line of the video frame; and

(b) merging the generated video frame in said image data file with a desired video frame in the video data file to produce a master video data file, wherein the pixel representation of the desired control data is mapped onto a line in the vertical blanking interval of the desired video frame.

2. (currently amended) The method of claim 1, further comprising the step of

c) recording said master video data file on a suitable storage medium.

3. (original) The method of claim 2 wherein said storage medium is a video cassette.

4. (currently amended) The method of claim 1, wherein said image data file is merged with an underlying program said video data file using a non-linear video editing system.

5. (currently amended) The method of claim 1 wherein said pixel representation of desired control data spans across one horizontal line of video information a corresponding video frame of said image data file.

6. (currently amended) The method of claim 1 wherein said pixel representation of desired control data comprises at least two lines of video data a corresponding video frame of said image data file.

7. (original) The method of claim 1 wherein said pixel representation further includes an initialization sequence.

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8. (currently amended) The method of clam 1 wherein <u>the image data file comprises a plurality of</u> <u>video frames, each including a pixel representation of desired control data in at least one line of the</u> <u>corresponding video frame; the method further comprising</u>

<u>   repeating the merging step for a desired number of video frames in the image data file.</u> ~~said pixel representation generated in step (a) are added to the vertical blanking interval of said~~ ~~master video data file~~.

9. (currently amended) The method of claim 8 <u>1</u> wherein said pixel <u>representation</u> ~~representations~~ ~~generated in step (a)~~ are <u>mapped</u> ~~added~~ to Line 21 of the vertical blanking interval of said ~~master~~ <u>desired</u> video <u>frame of said video</u> data file.

10. (currently amended) A method for encoding control data in a video data ~~stream~~ <u>file, the video</u> <u>data file including at least one video frame</u>, said method comprising ~~the steps of~~:
        (a) ~~inputting~~ <u>receiving</u> control data;
        (b) generating <u>an image data file comprising a video frame including</u> a pixel representation of said control data <u>in at least one line corresponding to a line in the vertical blanking interval of an</u> <u>underlying video frame</u>; and,
        (c) <u>merging a video frame in the image data file with a desired video frame in the video data</u> <u>file</u> ~~adding said pixel representation of said control data to said video data stream~~.

11. (currently amended) The method of claim 10 wherein <u>a line in the video frame of</u> said video data <u>file</u> ~~stream includes a~~ <u>corresponds to a line in the</u> vertical blanking interval, and wherein said pixel representation of said control data is <u>mapped</u> ~~added~~ to <u>the corresponding line in</u> the vertical blanking interval of said video <u>frame of the merged video data file</u> ~~data stream~~.

12. (currently amended) A method for encoding control data in a <u>digital</u> video data <u>file</u> ~~stream~~, said method comprising ~~the steps of~~:
        (a) ~~inputting~~ <u>receiving</u> control data and command directives;
        (b) inserting said control data in a data structure according to said command directives,

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wherein elements of said data structure represent time points; and,

(c) merging said control data with ~~an underlying~~ the digital video data file ~~stream~~, wherein the arrangement of said control data in said data structure controls at least in part said merging step (c); wherein said merging step (c) comprises

_____(c1) inserting said control data in said digital video data file; and,

_____(c2) editing said digital video data file to accept said control data inserted in step (c1).

13. (currently amended) The method of claim 12 further comprising the step of:

(d) converting said control data into byte code representations according to a predetermined specification, before said merging step (c).

14. (currently amended) The method of claim 12 wherein the control data comprises closed-caption data ~~13 wherein said video data stream is a digital video data stream; and wherein said merging step (c) comprises~~

_____~~(c1) inserting said control data converted in step (d) in said digital video data stream; and,~~

_____~~(c2) editing said digital video data stream to accept said control data inserted in step (c1).~~

15. (currently amended) The method of claim ~~14~~ 12 further comprising the step of

(c3) storing said digital video data file ~~stream~~ edited in step (c2) on a suitable storage medium.

16. (currently amended) The method of claim 15 wherein said suitable storage medium is a ~~digital~~ video cassette.

17. (currently amended) The method of claim ~~14~~ 12 further comprising the step of

(c3) transmitting said digital video data file ~~stream~~ edited in step (c2).

18. (currently amended) The method of claim ~~14~~ 12 wherein said control data inserted in step (c1) is inserted into the auxiliary data portion of said digital video data file ~~stream~~.

19. (cancelled)

20. (currently amended) A method for encoding control data in a video data file stream, the video data file comprising at least one video frame, said method comprising the steps of:

      (a) inputting receiving a control data script, said control data script comprising command directives and control data;

      (b) inserting said control data in a data structure according to said command directives, wherein elements of said data structure represent time points; and,

      (c) for at least one element in said data structure, generating an a control data image frame comprising a pixel representation of corresponding control data in a line of the control data image frame corresponding to a line in the vertical blanking interval.

21. (currently amended) The method of claim 20 further comprising the step of

      (d) merging said control data image frame with an image a desired video frame in said video data file stream.

22. (original) The method of claim 21 wherein said pixel representation is a gray-scale pixel representation.

23. (currently amended) The method of claim 21 wherein said merging step (d) comprises mapping adding said pixel representation to a line corresponding in the vertical blanking interval of an image the desired video frame in said video data file stream.

24. (currently amended) The method of claim 22 said merging step (d) comprises mapping adding said pixel representation to a line corresponding in the vertical blanking interval of an image the desired video frame in said video data file stream.

25. (original) The method of claim 20 wherein said data structure comprises an array.

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26. (original) The method of claim 20 wherein said data structure comprises two parallel arrays.

27. (currently amended) The method of claim 26 wherein the elements in said parallel arrays correspond to the <u>video</u> ~~image~~ frames in said video data <u>file</u> ~~stream~~.

28. (currently amended) A method for encoding control data in a video data <u>file</u> ~~stream~~, <u>the video data file comprising at least one video frame,</u> said method comprising ~~the steps of~~:

~~(a) inputting~~ <u>receiving</u> a control data script, said control data script comprising command directives and control data;

<u>converting said control data into byte code representations according to a predetermined specification;</u>

~~(b)~~ inserting said <u>converted</u> control data in a data structure according to said command directives, wherein elements in said data structure represent time points; ~~and,~~

~~(c) for each element in said data structure, generating an image frame comprising a pixel representation of the corresponding control data.~~

<u>generating a sequence of control data video frames each having a pixel representation of converted control data in a line of the video frame; and,</u>

<u>mapping the pixel representations of converted control data in said sequence of control data video frames to corresponding lines in the vertical blanking interval of desired video frames in the video data file.</u>

29. (currently amended) The method of claim 28 <u>wherein the control data comprises closed-caption data</u> ~~further comprising the step of~~

~~(d) for each of said image frames generated in step (c), merging said image frame with a corresponding image frame in said video data file.~~

30. (currently amended) The method of claim 29 wherein said pixel ~~representation is a~~ <u>representations are</u> gray-scale pixel ~~representation~~ <u>representations</u>.

31. (currently amended) The method of claim ~~29~~ <u>28 wherein</u> said <u>mapping</u> ~~merging~~ step ~~(d)~~

comprises mapping ~~adding~~ said pixel ~~representation~~ representations to Line 21 of the vertical blanking interval of ~~an image frame~~ the desired video frames in said video data file ~~stream~~.

32. (currently amended) The method of claim ~~29~~ 28 wherein said mapping ~~merging~~ step ~~(d)~~ comprises mapping ~~adding~~ said pixel ~~representation~~ representations to the vertical blanking interval of ~~an image frame~~ the desired video frames in said video data file ~~stream~~.

33. (original) The method of claim 28 wherein said data structure comprises an array.

34. (original) The method of claim 28 wherein said data structure comprises two parallel arrays.

35. (currently amended) The method of claim 34 wherein the elements in said parallel arrays correspond to the ~~image~~ video frames in said video data file ~~stream~~.

36. (cancelled)

37. (currently amended) A method for adding control data to an underlying video data file, the video data file comprising at least one video frame, said method comprising the steps of

      (a) generating ~~an~~ a control data image ~~date~~ file comprising a sequence of image frames ~~picture images~~, said image frames ~~picture images~~ each including a linear pixel ~~image~~ representation of desired control data;

      (b) merging, within the context of a video editing system, an image frame in said control data image data file with a desired video frame in the video data file by mapping the linear pixel representation of said control data to a line in the desired video frame corresponding to a line in the vertical blanking interval ~~an underlying program video data file to produce a master video data file~~.

38. (currently amended) An apparatus for encoding control data in a video data file ~~stream~~, the video data file comprising at least one video frame, comprising:

      a user interface facilitating input of control data;

means for generating a control data image file comprising a video frame having a pixel representation of said control data in a line of the video frame corresponding to a line in the vertical blanking interval of the video frame.

39. (currently amended) The apparatus of claim 38 further comprising

means for adding the video frame having said pixel representation of said control data to a desired line in the vertical blanking interval of the desired video frame in said video data file stream.

40. (original) An apparatus according to claim 38 wherein said generating means generates pixel representations of control data according to a predetermined specification.

41. (currently amended) The apparatus of claim 38 wherein said user interface facilitates input of command directives, and wherein said apparatus further comprises:

a computer readable memory including a data structure, wherein elements of said data structure represent time points;

processing means for inserting said control data in said data structure according to said command directives; and,

wherein said generating means generates an image a video frame comprising a pixel representation of the corresponding control data in at least one line of the video frame corresponding to the vertical blanking interval.

42. (original) The apparatus of claim 38 wherein said user interface facilitates entry of an external data file comprising control data and command directives.

43. (currently amended) An apparatus for encoding control data in a video data file stream, said video data file stream including at least one video frame having a vertical blanking interval, comprising:

a video editing device, wherein said video editing device maps at least one line of the video data file to one line of the vertical blanking interval of a video frame signal;

a user interface facilitating input of control data and command directives;

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a computer-readable memory, said computer readable memory storing said control data and command directives;

processing means associated with said memory for generating a control data image file comprising a video frame having a pixel representation image representations of said control data;

wherein said video editing device merges said video frame having said pixel representation representations of said control data with a desired video frame of an underlying video data file stream according to said command directives, and maps the pixel representation of said control data to a desired line in the vertical blanking interval of the desired video frame.

44. (original) The apparatus of claim 43 wherein said video editing device maps said pixel representations of said control data to a line line 21 in the vertical blanking interval of said desired video frame of video data file stream.

45. (original) The apparatus of claim 43 wherein said memory includes a data structure, and wherein said processing means further stores said control data in said data structure according to said command directives.

46. (currently amended) The apparatus of claim 45 wherein elements in said data structure correspond to image video frames in said video data file stream.

47. (currently amended) An apparatus for encoding control data to video data file stream, said video data file stream including at least one video frame having a line corresponding to a line of the a vertical blanking interval, comprising:

video editing means for mapping video data;

wherein said video editing means maps at least one line of the vertical blanking interval of video frames of said video data file;

first video image storage means associated with said video editing means for storing the video data;

a user interface facilitating input of control data and command directives;

a computer-readable memory, said memory storing said control data and said command

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directives;

     processing means associated with said input means and said memory for generating a sequence of image frames, at least one of said image frames comprising a pixel representation of said control data in a line of the image frame;

     wherein said video editing means is coupled to said first video image storage means and said processing means for merging said pixel representations of said control data in said sequence of image frames to corresponding lines in the vertical blanking interval of said desired video frames of video data file ~~with said video data~~.

48. (original) The apparatus of claim 47 further comprising means for converting said control data into byte code representations of said control data.

49. (original) The apparatus of claim 47 wherein said processing means generates said sequence of image frames according to said command directives.

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